

Wave Life Sciences Announces Pricing of \$70.0 Million Underwritten Offering

CAMBRIDGE, Mass., June 14, 2022 – Wave Life Sciences Ltd. (Nasdaq: WVE), a clinical-stage genetic medicines company committed to delivering life-changing treatments for people battling devastating diseases, announced today the pricing of an underwritten offering (the "Offering") of 25,464,483 of its ordinary shares at an offering price of \$2.15 per ordinary share, and, to RA Capital Management, L.P. in lieu of ordinary shares, pre-funded warrants to purchase up to 7,093,656 ordinary shares at an offering price of \$2.1499 per pre-funded warrant, which represents the per share offering price for the ordinary shares less the \$0.0001 per share exercise price for each pre-funded warrant.

The per share offering price for the ordinary shares represents a premium of 7.5% over the closing price for Wave Life Sciences' ordinary shares on June 13, 2022. The pre-funded warrants contain a blocker provision which provides that they are only exercisable upon receipt of shareholder approval or if such exercise would not cause the aggregate number of ordinary shares or the combined voting power of total securities, in each case, beneficially owned by the holder (together with its affiliates) to exceed 19.99% of the number of ordinary shares or total securities, respectively, outstanding immediately after giving effect to the exercise. Gross proceeds to Wave Life Sciences from the Offering are expected to be approximately \$70.0 million, before deducting underwriting discounts and commissions and offering expenses. All of the securities in the Offering are being sold by Wave Life Sciences. The Offering is expected to close on or about June 16, 2022, subject to customary closing conditions.

RA Capital and other notable growth and life science investors participated in the Offering.

SVB Securities is acting as sole bookrunning manager for the Offering.

The Offering is being made only by means of a prospectus and related prospectus supplement forming part of a shelf registration statement that was previously filed with and declared effective by the Securities and Exchange Commission ("SEC"). The prospectus supplement and the accompanying prospectus relating to the Offering will be filed with the SEC and will be available on the SEC's website located at http://www.sec.gov, copies of which may be obtained, when available, from SVB Securities LLC, Attention: Syndicate Department, 53 State Street, 40th Floor, Boston, MA 02109, by telephone: (800) 808-7525, ext. 6105, or by e-mail: syndicate@svbsecurities.com.

This press release shall not constitute an offer to sell, or a solicitation of an offer to buy, nor will there be any sale of these securities in any state or other jurisdiction in which such an offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such state or other jurisdiction.

About Wave Life Sciences

Wave Life Sciences (Nasdaq: WVE) is a clinical-stage genetic medicines company committed to delivering life-changing treatments for people battling devastating diseases. Wave aspires to develop best-in-class medicines across multiple therapeutic modalities using PRISM, the company's proprietary discovery and drug development platform that enables the precise design, optimization and production of stereopure oligonucleotides. Driven by a resolute sense of urgency,

the Wave team is targeting a broad range of genetically defined diseases so that patients and families may realize a brighter future.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. The words "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "estimate," "predict," "project," "potential," "continue," "target" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements include statements regarding the Offering of ordinary shares and pre-funded warrants to purchase ordinary shares. These statements are subject to various risks and uncertainties, actual results could differ materially from those projected and Wave cautions investors not to place undue reliance on the forward-looking statements in this press release. These risks and uncertainties include, without limitation, risks and uncertainties related to market conditions and satisfaction of customary closing conditions related to the Offering. There can be no assurance that Wave will be able to complete the Offering on the anticipated terms, or at all. Any forward-looking statements in this press release are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this press release, including, without limitation, the risks and uncertainties described in the section entitled "Risk Factors" in Wave's prospectus supplement related to the Offering to be filed with the SEC on June 14, 2022 and Wave's most recent Annual Report on Form 10-K filed with the SEC, as amended, and in other filings Wave makes with the SEC from time to time. Wave undertakes no obligation to update the information contained in this press release to reflect subsequently occurring events or circumstances.

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